

metastatic disease. Systemic drugs are administered weekly for two years. The decision of which cases require such treatment is, at present, the subject of debate among physicians currently caring for these children.

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Electroretinography and Retinal Function Testing

WITH RECENT IMPROVEMENTS in instrumentation and technique, special tests of retinal function have become increasingly valuable in the total assessment of retinal disorders.

The electroretinogram (ERG), long studied with regard to wave form analysis, is now better understood in terms of the cellular origin of the various wave components. The time dependent relationships of the ERG are recognized as being more stable than alterations in amplitude, and an appreciation of the value of threshold determination (long recognized by basic science workers) is growing among clinical investigators.

Recent studies of various forms of hereditary retinal pigmentary degeneration (that is, retinitis pigmentosa) have shown the value of electroretinography as a means of identifying minimally affected persons and those representing the carrier state. Together with visual fields and dark adaptation measurements, changes in the ERG help the clinician to monitor the course of these and other progressive disorders.

Dark adaptometry is still a valuable adjunct to electroretinography for separating rod from cone disorders. This is true despite the knowledge that there are many areas of functional overlap in which rods and cones seem to share physiologic features originally thought to be mutually exclusive.

An electro-oculogram (EOG)—an electroencephalographic tracing made by moving the eyes a constant distance between two fixation points—in certain instances can provide information not

readily obtainable from the ERG. The EOG appears to be more sensitive to focal macular changes than the ERG, and this can be very helpful. It is technically easier to obtain than the focal ERG, which requires very complex instrumentation and a high degree of patient cooperation.

Interest in the visually evoked potential (VEP) is increasing. The test is relatively easy to do, but requires computer enhancement and averaging. A major disadvantage of this test is the difficulty of interpreting the results, because the individual portions of the complex wave are incompletely understood. Still, the VEP can provide information about macular function, as reflected by the occipital electroencephalographic response. This is especially useful in pediatric cases where other tests of visual function are impossible to obtain.

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Phacoemulsification

PHACOEMULSIFICATION is a method of emulsifying and aspirating a cataract with the use of a hollow needle vibrating at 40,000 cycles per second. The surgical instrument system includes irrigation and aspiration components, and allows for partial removal of a cataract through a small surgical incision (2.5 to 3 mm). In addition to a small surgical wound, phacoemulsification allows for the preservation of a round pupil. There are fewer postoperative problems of corneal astigmatism and corneal hypesthesia with its use. Fewer problems with wound closure are encountered, and the incidence of hyphema and flat anterior chamber is less.

The technique is ideal for congenital cataracts and for soft cataracts in young patients where intracapsular extraction would be most difficult. It is contraindicated in corneal dystrophy, uncontrolled glaucoma, and shallow anterior chamber, and in patients with poor pupillary dilation. Phacoemulsification is a demanding technique. Surgeons performing it must be properly trained, have stereopsis, and be thoroughly familiar with the use of the operation microscope. This tech-